**IN THE CLAIMS**

Claim 1 (original): A blood treatment device having a blood purification element (1) which is divided into two chambers by a semipermeable membrane (3), its first chamber (4) being part of a dialysis fluid circuit (20) and its second chamber (2) being part of an extracorporeal blood circuit (10),

having a dialysis fluid inlet line (22) which leads from a dialysis fluid processing unit (21) to supply fresh dialysis fluid to the first chamber (4) and/or directly into the blood circuit (10),

having a dialysis fluid outlet line (23) for removing spent dialysis fluid from the first chamber (4),

having a blood inlet line (11) for supplying blood to the second chamber (2),

having a blood return line (12) for returning blood from the second chamber (2),

having a control unit (34) for controlling the blood treatment device,

having an analyzer unit (32) which is connected to the control unit (34),

having at least one sensor (31) which is connected to the analyzer unit (32) on at least one blood circuit (10) or dialysis fluid circuit (20) for detecting the concentration of a substance which is capable of penetrating through the

semipermeable membrane (3),
whereby the analyzer unit (32) is suitable for determining on the basis of the measured values of the at least one sensor (31) the concentration Cbi of this substance in the blood in the blood inlet line (11), the instantaneous transfer rate $\Delta M/\Delta t$ of this substance through the membrane (3) and the total quantity M of this substance withdrawn through the membrane (3) during the treatment,

whereby a first admissible value range for the blood concentration Cbi of the substance, a second admissible value range for the transfer rate $\Delta M/\Delta t$ and a third admissible value range for the total quantity M of the substance to be withdrawn are stored in the analyzer unit (32), and

whereby the analyzer unit (32) is designed so that it instructs the control unit (34) to the extent that the blood treatment device performs the blood treatment while maintaining all three admissible value ranges.

Claim 2 (original): The blood treatment device according to Claim 1, characterized in that the at least one sensor (31) is provided in the dialysis fluid outlet line (23) for determining the concentration Cdo.

Claim 3 (original): The blood treatment device according to Claim 2, characterized in that a second sensor is provided in the dialysis fluid inlet line (22) for determining the concentration Cdi of the substance and is also connected to the analyzer unit (32).

Claim 4 (original): The blood treatment device according to Claim 2, characterized in that the concentration Cdi of the

substance in the dialysis fluid inlet line (22) is predetermined by the control unit (34) and/or the analyzer unit (32).

Claim 5 (currently amended): The blood treatment device according to Claim 1 ~~one of the preceding claims~~, characterized in that the substance is potassium.

Claim 6 (currently amended): The blood treatment device according to Claim 1 ~~one of the preceding claims~~, characterized in that the second value range extends from zero up to a maximum value.

Claim 7 (currently amended): The blood treatment device according to Claim 1 ~~one of the preceding claims~~, characterized in that a target value Mend which is within the third value range is stored in the analyzer unit (32) for the total quantity of the substance to be withdrawn.

Claim 8 (original): The blood treatment device according to Claim 7, characterized in that the analyzer unit (32) instructs the control unit (34) that the target value Mend has been reached after a planned treatment time.

Claim 9 (original): The blood treatment device according to Claim 7, characterized in that the analyzer unit (32) instructs the control unit (34) that on reaching the target value Mend the blood treatment is to be continued with a concentration Cdi of the substance in the dialysis fluid inlet line (22) such that there is no longer any transfer of the substance (3) through the membrane.

Claim 10 (currently amended): The blood treatment device according

to Claim 1 ~~one of the preceding claims~~, characterized in that the control unit (34) is suitable for ordering an initial measurement of the blood concentration Cbi with preset treatment parameters and the analyzer unit (32) is suitable for determining the initial value of Cbi, and taking into account this value, the first admissible value range and the second admissible value range for the blood treatment, proposing a value for the concentration Cdi of the substance in the dialysis fluid inlet line (22), the dialysis fluid flow Qd and/or the blood flow Qb.

Claim 11 (original): The blood treatment device according to Claim 10, characterized in that the analyzer unit (32) determines the concentration Cdi on the basis of the value which corresponds to the lower limit of the first admissible value range.

Claim 12 (original): The blood treatment device according to Claim 10, characterized in that the analyzer unit (32) determines the concentration Cdi by the upper limit of the second admissible value range.

Claim 13 (currently amended): The blood treatment device according to Claim 11 ~~and 12~~, characterized in that selection means regarding a prioritization of the withdrawal [of the substance] are provided on the input device (35) by an alignment with the lower limit of the first admissible value range or the upper limit of the second admissible value range.